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SHORT COMMUNICATION

SEBACEOUS GLAND ADENOMA IN A FREE-RANGING BAIRD'S TAPIR *TAPIRUS BAIRDII* (TAPIRIDAE: PERISSODACTYLA)

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SEBACEOUS GLAND ADENOMA IN A FREE-RANGING BAIRD'S TAPIR *TAPIRUS BAIRDII* (TAPIRIDAE: PERISSODACTYLA)

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Abstract: An external mass was observed on the ear of a free-ranging Baird's Tapir *Tapirus bairdii*. The mass was surgically removed under general anesthesia and was histopathologically identified as sebaceous gland adenoma. Hematological and biochemical analyses were also performed. The animal showed a mild anemia and the other values were unremarkable. Only few cases of tumors have been reported in tapirs and this is the first report of a tumor in a free ranging Baird's Tapir. The presence of any disease in free-ranging wildlife should call our attention in order to develop a better understanding of disease ecology, especially in threatened species.

Keywords: Histopathology, neoplasia, tumor.

The Baird's Tapir *Tapirus bairdii* is classified as an Endangered species on the IUCN Red List (García et al. 2016) due to threats like habitat fragmentation, hunting, and increasing roadkills (Brenes-Mora 2017). It ranges from southern Mexico to northwestern Colombia, with the population comprising less than 6000 individuals within the entire distribution range (García et al. 2016;

Schank et al. 2017). Tapirs' habitats in the wild include a great diversity of ecosystems from sea level to altitudes of 3600m (González-Maya et al. 2012; Schank et al. 2017).

The health status of free-ranging tapirs is a very important aspect to take into account when developing conservation strategies for this endangered species in the wild (Mangini et al. 2012). In the past, neoplasia in wildlife was not considered to be a conservation concern, however, with the identification of the Tasmanian Devil facial tumor disease, the sea turtle fibropapillomatosis and the sea lion genital carcinoma, it has become apparent that highly prevalent tumors can have considerable effects on a species and that anthropogenic activities can contribute to the development of such tumors (McAloose & Newton 2009). Hence the presence of any disease in free-ranging species should call our attention in order to develop a better understanding of disease ecology, especially in threatened species.

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Competing interests: The authors declare no competing interests.

Ethical approval: The procedure was performed under the approval of the National Environment Ministry (MINAE), and the National System of Conservation Areas (SINAC), Área de Conservación Central, under "Oficio VS-011 del 8 de marzo de 2018".

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Sebaceous gland adenomas are benign, can be surgically excised and are not life-threatening (Knottenbelt et al. 2015). To the authors' knowledge, this is the first report of a sebaceous gland adenoma in a tapir species.

MATERIALS AND METHODS

An approximately 15-year-old free-ranging female Baird's Tapir, that often came by a private natural reserve in Guápiles, Limón, Costa Rica, was observed to have a protruding multifocal to coalescing, pink, hairless, ulcerated mass on the inner surface of the left ear (Image 1).

This animal was accustomed to feed from an artificial feeder at the reserve and by positively reinforcing the tapir with food and scratches it was possible to lure it into a chute (Image 2). Once the animal was comfortable in the chute, a biopsy was taken in a first approach in order to establish if the lesion was a malignant neoplasia. Therefore, lidocaine (Lidocaina HCl 2%, Laboratorios Faryvet S.A., Apdo. 55-3006, Barreal, Heredia, Costa Rica; 20mg) was locally infiltrated into the mass, and a biopsy (1cm x 0.5cm) was resected and fixed in 10% buffered formalin and submitted for histopathologic examination to the Department of Pathology at the Faculty of Veterinary Medicine at the National University of Costa Rica. The histopathological examination of the biopsy revealed a sebaceous gland adenoma.

Surgical removal of the mass was scheduled. The estimated weight of the animal was 230kg. The tapir was restrained in the same chute for manual injection. The anesthetic combination used consisted of Butorphanol tartrate (Butormin, Holliday Scott S.A.) at 0.18mg/kg and a total amount of 40mg intramuscular, Xilacine (Procin Equus, Pisa Agropecuaria S.A.) at 0.44mg/kg and a total amount of 100mg intramuscular, injected 10 minutes after Ketamine (Ketamin 10%, Bremer Pharma GMBH) given at 0.65mg/g with a total amount of 150mg intramuscular. Ketoprofen (Dolfen, Laboratorio Hispanoamericano S.A.) at 1mg/kg with a total amount of 230mg intramuscular was used for additional analgesia and a long-acting Enrofloxacin (Baytril Max, Bayer S.A.) at 7.5mg/kg with a total amount of 1725mg intramuscular was used as antibiotic. Anesthesia was reversed with tolazoline (Tolazine, Lloyd Laboratories, USA) at 4mg/kg with a total volume of 920mg injected intravenously.

A section of the excised tumor of 4.5cm x 4cm x 2cm was fixed in 10% buffered formalin (Image 3) and processed for histopathological analysis (Veterinarian pathology Services Dr Guevara laboratories), which



Image 1. Clinical appearance of the ear mass in the Tapir.



Image 2. Chute built for positive reinforcement with food to get the tapir to give anesthetic injection.



Image 3. Macroscopic appearance of the mass (fixed in 10% buffered formalin).



Image 4. Post-surgical appearance after sebaceous gland adenoma was removed from the Tapir's ear.

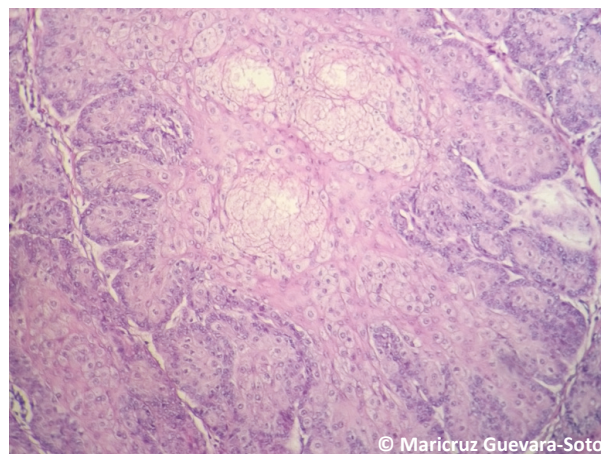


Image 5. Microscopic appearance of the sebaceous gland adenoma. Hematoxylin-Eosin Stain. 100x.

confirmed the previous result of a sebaceous gland adenoma.

The surgical incision area was cauterized and left without any sutures (Image 4).

RESULTS

The histopathological examination revealed a multinodular neoplasia with the presence of a moderate amount of reserve cells at the periphery of the tumor. At the center of the multifocal nodules are mature regular sebaceous cells with a vacuolated cytoplasm and an eccentric nucleus. The nodules are separated by a thin layer of fibrovascular tissue (Image 5).

A complete hematological examination was performed and a number of biochemical blood values were also analyzed; aspartate aminotransferase, creatinine, urea, total protein and albumin. The animal showed mild anemia (PCV 20.9%, Hb 8g/dl, RBC $4.0 \times 10^{12}/l$), the other values were unremarkable. Though the anemia was probably not directly related to the neoplasia, the tumor can cause pain or lack of comfort and the animal might therefore not have been eating well. Another explanation for the anemia might have been the heavy tick infestation and we recommended appropriate treatment.

DISCUSSION

Few tumor cases have been reported in tapirs this far (Karpinski & Miller 2002; Kidney & Berrocal 2008; Mangini et al. 2012; Bonar et al. 2016; Miller et al. 2016). Ear tumors specifically have been reported in captive tapirs in Costa Rica, but they were classified as sarcoid tumors, related with Bovine Papillomavirus type 1 or 2

(BPV1 and BPV2) (Kidney & Berrocal 2008).

Among domestic animals, sebaceous gland adenomas are very common in dogs, and uncommon in cats (Meuten 2017). Microscopically, the sebaceous gland adenoma is comprised primarily of mature sebaceous cells. These cells are arranged more basal than in a hyperplasia, there is marked lobular proliferation and cell organization is asymmetrical. Adjacent structures are frequently involved often including melanocytes, giving pigmented characteristics to the tumor (Maxie & Youssef 2007). Sebaceous gland adenomas are benign and should be surgically excised (Knottenbelt et al. 2015).

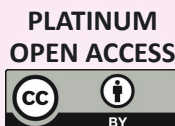
Although sebaceous cell adenomas are fairly common in mammals, there is no prior report of these tumors in tapirs and we hope that our findings are a valuable source of information for continuing tapir conservation efforts.

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